ROCHESTER

Minnesota

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WATER HEATERS

Which one is right for your personal hot water needs; tankless, hybrid, or tank type?

As the plumbing industry evolves, many new products become available for consumers. Water heaters are no exception. Just a few years ago there was really only one choice; water heaters with a tank that heats and retains hot water ready for use when needed. Of course the water in the storage tank cools during non-use and must be reheated resulting in a waste of energy resources. Tankless or in-line heaters were developed to combat this energy loss. The absence of a storage tank saves energy lost to cooling but requires the heater to keep up with the demand for hot water instantaneously. The issue is being able to select the **proper size** that will match your home or business's minimum requirements for hot water peak demands.

We have reviewed the national codes and various manufacturers' specifications and identified what we believe is the least restrictive method of determining peak hot water demand, to assist you in making the best decision in determining how to meet your hot water needs.

All national standards agree that hot water (110 degrees minimum to 140 degrees maximum) shall be available for use in any residential application. For commercial applications not involving food service, tempered water (85 degrees to 110 degrees minimum) is permitted.

Tankless water heaters or hybrids may be installed if they provide the minimum gallons per minute (gpm) needed to meet the peak hot water demand. Tankless water heater's gpm output depends on your incoming tap water temperature. The colder the incoming water, the less hot water the heater will be able to supply. Here in Minnesota, incoming water temperature during our colder months is around 45 degrees, which must be heated to 110 degrees to be supplied to the fixtures. This **temperature difference** (65 degrees) is used in the manufacturers' sizing chart to determine the model of water heater needed to provide enough hot water to meet the peak hot water demands. Using the examples below you can see that a tankless water heater serving a 2 bathroom home must provide 7.8 gpm at a 65 degree temperature rise. Multiple tankless water heaters may be needed to provide the required quantity of hot water.

Examples of hot water requirements:
2 bathroom home, with kitchen fixtures and laundry requires—**7.8 gpm of hot water**.
2 ½ bathroom home, with kitchen fixtures and laundry requires—**8 gpm of hot water.**
3 bathroom home, with kitchen fixtures and laundry requires—**9 gpm of hot water.**

Any additional bathroom groups count as an additional 1 gpm requirement. For any fixtures not listed, factors may be assumed by comparing the fixture to one that is listed using similar quantities for gpm requirements.

Tankless and Hybrid heaters must be installed in compliance with the manufacturers' installation instructions, including venting requirements, combustion air needs and gas pipe sizing for the increased BTU load requirements.

Based on these minimum requirements you should now be able to make a better decision as to which appliance may best suite your hot water needs.